Covering The Uninsured Through TennCare: Does It Make A Difference?

Tennessee may have to rein in its ambitious coverage expansions, despite its proven ability to lower access barriers.

by Lorenzo Moreno and Sheila D. Hoag

ABSTRACT: Tennessee created TennCare in 1994 to address the needs of "poor and uninsured citizens...excluded from the health care system." Under TennCare, Tennessee implemented managed care in its Medicaid program and used savings anticipated from the switch to expand insurance coverage to uninsured and uninsurable adults and children. Our analysis of the expansion suggests that it improved access to care, reduced unmet need, and encouraged use of preventive services, particularly for children. These changes coincided with higher levels of satisfaction with care among TennCare beneficiaries.

TENNESSEE CREATED TENNCARE in 1994 to address the needs of the "hundreds of thousands of poor and uninsured citizens...excluded from the health care system."[1] Under TennCare, Tennessee implemented managed care in its Medicaid program and used savings anticipated from the switch to managed care to expand insurance coverage to uninsured and uninsurable residents.[2] Many policymakers and the press have criticized TennCare over the years, but it has provided coverage to thousands of persons who otherwise would lack insurance.

In this report, the first of its kind, we examine whether TennCare's expansion program makes a difference in beneficiaries' access to and satisfaction with care compared with that of their uninsured or uninsurable peers. This is critical to study now, since Tennessee, faced with financial difficulties, is considering revamping TennCare. Alternatives range from closing enrollment to new uninsured and uninsurable persons to carving out the expansion program as a state-funded high-risk insurance pool.[3]

Initially, the TennCare expansion offered health insurance coverage through fully capitated managed care organizations to uninsured and uninsurable Tennesseans, known as the "expansion group."[4] This expansion offered subsidized coverage to all unin-

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sured and uninsurable Tennesseans with annual family incomes below 400 percent of the federal poverty level, while those above 400 percent of poverty could receive unsubsidized coverage.[5] This expansion is considerably more ambitious than those of other states (such as California, Delaware, Hawaii, Massachusetts, Minnesota, Oregon, Vermont, and Washington), which targeted persons with incomes at 100–200 percent of poverty. Enrollment in the expansion group has fluctuated over the years; Tennessee closed enrollment in late 1994 to uninsured persons, mostly adults, because of budget problems.[6] Expansion-group enrollment increased steadily since 1997, peaking at 517,607 persons in October 1999.[7]

Data And Methods

■ **Survey.** Our study relies on data from a random-digit, computer-assisted telephone survey of Tennessee households. Data were collected in two separate waves in 1998 and 1999, combined to attain reasonable statistical power for making inferences about TennCare's effects on access barriers, unmet need, use of services, use of preventive screening, and satisfaction with care. Households were screened to identify TennCare beneficiaries under age sixty-five who were eligible under the expansion rules. The survey also screened for uninsured persons residing in households with incomes below 250 percent of poverty. Once such persons were identified, we randomly selected one eligible adult, one eligible child, or both within each available family. The uninsured persons were used as a comparison group to assess whether providing coverage through TennCare to adults and children (age seventeen or younger) who would not otherwise be eligible under the standard Medicaid rules makes a difference in access to and satisfaction with care. This low-income group includes (1) persons who were eligible for TennCare and chose not to enroll, (2) persons who were eligible but could not enroll because TennCare was closed to new uninsured persons, and (3) persons who were ineligible for TennCare because other insurance was available to them but they chose not to enroll in it. The surveys yielded a sample of 1,376 completed interviews (1,061 adults and 315 children). The response rates were 72 percent for the 1998 wave and 76 percent for the 1999 wave.[8]

■ **Children, adults, and comparison group.** We expected the expansion of coverage to have different effects on the outcome measures considered for adults and children, so we conducted separate analyses for each group. Our children's expansion and uninsured comparison groups are similar in all characteristics considered, except for residence in a metropolitan statistical area (MSA) (Exhibit 1).[9] For adults, however, the two groups differ somewhat on self-reported health status, prevalence of chronic conditions, and having

EXHIBIT 1
Characteristics Of TennCare Expansion And Uninsured Comparison Groups, 1998–1999

Characteristic	Adults (N = 1,061)		Children (N = 315)	
	Expansion group (n = 416)	Uninsured comparison group (n = 645)	Expansion group (n = 162)	Uninsured comparison group (n = 153)
Health status (self-reported)				
Very good or excellent health status	34.5%	39.3%**	75.0%	69.6%
Have a chronic condition	76.8	62.1**	10.1	10.0
Have a spouse, children, or parent/guardian with a serious health problem	22.2	12.8**	20.5	20.8
Attitude toward health care				
Definitely not concerned about their health	31.7	27.1	32.1	31.8
Definitely do not avoid the doctor	23.3	22.2	17.6	21.0
Believe it is better to plan their lives far ahead	61.6	61.0	55.4	64.7
Sociodemographic characteristics				
Family income is less than 100 percent of poverty	36.7	28.1**	18.1	31.2
Employed full time	38.5	45.4	54.4	49.2
Reside in MSA	57.3	64.7	48.3	72.4**
Female	59.1	50.8**	52.2	41.6
Have less than 12 years of education (mother/guardian for children)	34.2	27.8	23.5	31.9
Family living arrangement is two married adults with children	27.7	34.6	67.2	63.3

SOURCE: Five-State Household Survey, Tennessee Random-Digit-Dialing Sample, 1998–1999.
NOTES: All observations were weighted to reflect their probability of selection and length of exposure. Reported statistically significant differences correspond to a two-tailed test. Differences are expressed in relation to expansion groups. MSA is metropolitan statistical area.
**$p \leq .05$

a spouse or child with a serious health problem that frequently required medical attention. On each measure, uninsured persons and their families were healthier than TennCare enrollees. Also, a larger percentage of adults in the expansion group than in the comparison group reported family incomes below poverty. Our analysis controlled for these differences using regression methods.[10]

■ **Attitudinal variables.** We assessed whether self-selection of Tennesseans into the expansion group might bias our estimates. If people who enroll in TennCare do so because they have more health problems or greater aversion to risk, we run the risk of finding differences that are attributable to these factors rather than to the effects of the expansion. Unlike many other studies, we collected data on a large number of variables that measure the propensity of persons to participate in TennCare.[11] We expected that this set of attitudinal variables would prove to be significant predictors of enrollment in TennCare. If this were the case, their inclusion in the regression models of outcomes would control for differences between the expansion and uninsured comparison groups in their propensity to participate in TennCare. As shown in Exhibit 1, our

expansion and uninsured comparison groups are similar in their attitudes toward health care, and differences in health status are controlled for in the analysis.[12] Moreover, using appropriate statistical techniques, we tested whether the estimates of expanded coverage are biased because of sample selection and found that bias was not a problem in our adult and child samples.[13]

All estimates reported in this paper are regression-adjusted, and all estimates take into consideration the stratification and clustering of the sample design.[14] All observations were weighted to account for the probability of selection, nonresponse, months without telephone coverage, and number of adults and children in a household. The sampling weights were then adjusted to reflect length of exposure to the possibility of experiencing an outcome.

Effects Of Expanding Coverage

■ **Barriers to care.** For the majority of measures of barriers to care we examined, expansion-group members scored significantly better than uninsured persons did (Exhibit 2). For instance, more than 92 percent of expansion-group members had a usual place of care, compared with fewer than 74 percent of uninsured persons. Also, more expansion-group adults and children always visited the same provider at their usual place of care than did their uninsured counterparts, signaling better continuity of care. Compared with uninsured persons, expansion-group members were about 30 percent more likely to have paid nothing out of pocket for care and about

EXHIBIT 2
Regression-Adjusted Estimates of Measures Of Barriers To Access For Adults And Children In TennCare, 1998–1999

	Adults		Children	
Measure	Expansion group	Uninsured comparison group	Expansion group	Uninsured comparison group
Have a usual place of care	92.3%	71.0%**	98.3%	73.7%**
Received a reminder for their appointment	54.0	53.6	51.8	32.6**
Usually receive an appointment the same or next day after they call	65.5	52.3**	85.2	66.2**
Received a reminder for a check-up visit	53.2	43.8	54.2	33.3**
Always visit the same provider at usual place of care	69.1	55.4**	57.3	39.4**
Travel time to usual place of care, in minutes	29.4	22.5	27.4	16.0
Waiting time at usual place of care, in minutes	47.0	46.6	38.8	54.5**
Paid nothing out of pocket for care in the past year	69.3%	50.9%**	77.2%	58.5%**
Paid more than $100 out of pocket for care in the past year	11.9	23.2**	4.9	11.6**

SOURCE: Five-State Household Survey, Tennessee Random-Digit-Dialing Sample, 1998–1999.
NOTES: Reported statistically significant differences (in comparison with expansion group) correspond to a one-tailed test. Sample sizes vary from measure to measure because some items are asked of individuals who meet specific conditions. Sample sizes are reported in Exhibit 1.
**$p \leq .05$

half as likely to have spent more than $100 in the past year.

■ **Unmet need and delays in receiving care.** These measures are important indicators of the match between people's expectations and the care they actually receive. Expansion-group adults reported significantly lower unmet need and service delays on all six measures we examined (not shown). For example, uninsured adults were nearly twice as likely as expansion-group adults were to not see a doctor when they needed one (63.8 versus 33.6 percent), to delay seeing a doctor when needed (53.2 percent versus 32.4 percent), and to take a needed prescription drug less often than recommended (21.9 percent versus 11.3 percent). Uninsured children scored similarly. Uninsured persons reported that the main reason for their unmet need was unaffordability, while transportation and scheduling topped the list for expansion-group members.

■ **Use of services.** TennCare appears to have increased access to care, as measured by intensity of service use, the traditional indicator of access to care. On four of the five measures we examined, expansion-group adults used more services than uninsured adults used, while expansion-group children used more services than their uninsured counterparts did on all five measures examined.

An alternative interpretation of these estimates—that the uninsured are simply healthier and less in need of care—is not consistent with other evidence from our survey. When the need for various services (including hospitalization) was measured by either receipt of the service or reported unmet need for it, the expansion and comparison groups appeared to have quite similar care needs. This finding, together with the uninsured persons' primary reason for not getting needed services (unaffordability), provides strong confirmation that the greater service use among TennCare enrollees is the result of their greater access to care.

■ **Use of preventive services.** Nearly three-quarters of expansion-group women who should have received a Pap smear in the past year reported that they received one, compared with half of those in the uninsured group. Similarly, nearly three-quarters of children in TennCare's expansion program received well-child visits on schedule, compared with 55 percent of uninsured children.

■ **Satisfaction with care.** Adults and parents or guardians of children in TennCare's expansion group were more satisfied than their uninsured counterparts were with their access to care and the care they received, but our findings are statistically significant for only five of the twelve aspects of care we measured for each group (Exhibit 3). Expansion-group and uninsured persons were about equally likely to rate as very good or excellent the number of doctors they had to choose from, the time spent waiting for and with the

EXHIBIT 3
Regression-Adjusted Estimates Of Measures of Satisfaction With Care For Adults And Children In TennCare, 1998–1999

	Adults		Children	
Measure	Expansion group	Uninsured comparison group	Expansion group	Uninsured comparison group
Length of time between making an appointment for routine care and the day of the visit is very good or excellent	43.8%	32.4%**	63.5%	40.8%**
Convenience of usual place of care is very good or excellent	59.7	48.5**	66.8	57.0
Number of doctors to choose from is very good or excellent	45.3	38.6	48.0	37.8
Length of time spent waiting at the office to see the doctor is very good or excellent	33.6	31.5	39.4	29.6
Amount of time spent with doctor and staff is very good or excellent	48.1	46.2	64.6	47.4**
Explanations of medical procedures and tests is very good or excellent	46.1	41.3	59.0	38.9**
Courtesy of doctors is very good or excellent	66.2	63.6	72.7	60.3
Can get medical help or advice right away	86.3	77.2**	91.3	75.9**
Freedom to change doctors is very good or excellent	31.5	37.6	43.9	34.3
Ease of getting medical care in an emergency is very good or excellent	40.6	29.8**	53.1	26.3**
Services available for getting prescriptions filled is very good or excellent	56.8	43.7**	60.0	52.9
Would recommend usual place of care to a friend or relative	87.4	81.7	91.3	91.3

SOURCE: Five-State Household Survey, Tennessee Random-Digit-Dialing Sample, 1998–1999.
NOTES: Reported statistically significant differences (in comparison with expansion group) correspond to a one-tailed test. Sample sizes vary from measure to measure because some items are asked of individuals who meet specific conditions. Sample sizes are reported in Exhibit 1.
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doctor, and the courtesy of their doctors. Since the percentage of expansion-group adults who rated specific aspects of care as very good or excellent rarely exceeded 50 percent, our findings suggest that either the managed care organizations or the providers have room to improve various aspects of care under TennCare.

Discussion And Lessons Learned

Tennessee implemented TennCare with the ambitious goals of controlling costs while increasing access to care, improving quality of care, and encouraging use of preventive care for Medicaid-eligible and uninsured/uninsurable Tennesseans. Our findings suggest that TennCare accomplished those goals. This conclusion is corroborated by two recent studies.[15]

■ **Implications for children.** Tennessee's success in expanding coverage to uninsured and uninsurable children is particularly relevant right now, as coverage for children is expanding nationwide through the implementation of the State Children's Health Insurance Program (SCHIP). As a precursor to SCHIP, TennCare demon-

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strates the feasibility of implementing a coverage expansion for children that is popular and improves access to care. TennCare, as the largest family-based expansion of health insurance coverage for low-income persons in recent history, corroborates the findings from dozens of studies that have addressed whether providing insurance coverage to the uninsured makes a difference.[16] Although our findings are specific to Tennessee, they demonstrate that a Medicaid expansion model, the model that twenty-six states plus the District of Columbia have adopted for their SCHIP programs, can greatly improve children's access to care.[17]

■ **Implications for adults.** Our findings also have important policy implications for adults. Since the requirements for gaining or maintaining Medicaid eligibility are so stringent, the consequences of losing health insurance coverage can be devastating for this population. Although Tennessee's expansion of coverage initially included uninsured and uninsurable adults, subsequent enrollment closures made it nearly impossible for uninsured adults to enroll in TennCare unless they qualified as uninsurable. Moreover, because TennCare entered the year 2000 with financial problems, Tennessee is proposing that uninsured and uninsurable adults bear the brunt of the intended reduction in TennCare coverage.[18]

Our findings indicate that although drastic changes such as dropping the adult expansion entirely or severely cutting it back might help TennCare to regain financial health and stability in the short term, the long-term implications for the health of uninsured and uninsurable adults are likely to be considerable. Less drastic alternatives, such as revising the incentives to participating managed care plans to really manage care or revising the cost-sharing policies for uninsured and uninsurable adults, might ensure that TennCare's coverage expansion could be maintained.

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NOTES

1. State of Tennessee, *TennCare: A New Direction in Health Care* (Nashville: State of Tennessee, 16 June 1993).
2. Before TennCare, Tennessee ran a health insurance program for Tennesseans who were uninsurable because of a health condition, although fewer than 4,000 persons were enrolled.
3. "TennCare: Dropping Enrollees Won't Save Money, Groups Say," *American Health Line*, 25 January 2000, <www.nationaljournal.com/pubs/healthline> (access limited to subscribers only) (26 January 2000). See also "TennCare: Expert Offers Managed Care Alternative," *American Health Line*, 21 July 2000, <www.nationaljournal.com/pubs/healthline> (24 July 2000).
4. To qualify as "uninsured," a person had to be ineligible for other insurance as of a qualifying date that changed as the program evolved. To qualify as "uninsurable," a person had to have been turned down for insurance coverage because of a past or present health condition. J. Wooldridge et al., *Implementing State Health Care Reform: What Have We Learned from the First Year?* First Annual Report of the Evaluation of Health Reform in Five States (Princeton, N.J.: Mathematica Policy Research, 18 December 1996).
5. TennCare financed the expansion from savings expected from shifting Medicaid enrollees to managed care and from income from expansion-group members' cost-sharing requirements.
6. Uninsurable persons could still enroll. Enrollment of uninsured children reopened in April 1997, and in May 1997 enrollment opened to dislocated workers. See Wooldridge et al., *Implementing State Health Care Reform.* See also A. Aizer, M. Gold, and C. Schoen, "Managed Care and Low-Income Populations: Four Years' Experience with TennCare," May 1999, <www.kff.org/content/1999/2129/pub2129.pdf> (14 August 2000).
7. "Statewide Enrollees by MCO," provided by TennCare Bureau January 1994 through September 1996 (in hard copy). Available on the Web October 1996 through January 2000, accessed monthly, <www.state.tn.us/tenncare/enrolmco.htm>.
8. These response rates are the product of the response rate for the household screener and that for the interview of eligible persons. These rates are defined as the ratio of total eligible households/families that completed the interview to an estimate of the total number of household/families eligible for interview.
9. The magnitude of this difference would only be cause for concern if the percentage of uninsured children who reside in an MSA were lower than the corresponding percentage of expansion-group children. In this instance, it might be difficult to interpret whether differences in key outcomes are the result of improved access under TennCare or the better access generally associated with residing in a metropolitan area. However, since the percentage in MSAs is larger for the uninsured group than for the expansion group, the greater access to care observed for the expansion group is more likely to be understated than overstated.
10. We used linear regressions to obtain estimates for travel time and waiting time in the office; logit regressions for binary variables; negative binomial regressions for number of visits and number of hospital admissions; and ordered-logit regressions for out-of-pocket expenditures, satisfaction variables, and other ordered variables such as reasons for having a specific unmet need. The regressions control for demographic characteristics, including sex, race, employment status, family living arrangement, and mother's education; MSA or non-MSA residence; whether income is under the federal poverty level; attitudes toward health care; and chronic conditions, including heart disease, hypertension, diabetes, mental illness, asthma, arthritis, and cancer. For chil-

dren, the chronic conditions were combined into one binary variable. Also, for children's interviews the parent or guardian answered questions about their own attitudes toward health care for children, and these responses were used as control variables.

11. See P.F. Short, "Examining Health Insurance Differences: Issues of Public Equity and Cost Efficiency," in *Informing American Health Care Policy: The Dynamics of Medical Expenditure and Insurance Surveys, 1977–1996*, ed. A. Monheit, R. Wilson, and R.H. Arnett III (San Francisco: Jossey-Bass, 1999), 69–94.
12. We controlled for chronic conditions but not for self-reported health status because we viewed this measure as potentially endogenous.
13. We estimated probit models for selected binary outcomes controlling for the individual characteristics described above. We also estimated bivariate probit models for the same outcomes and for the decision to participate in TennCare, including a set of instrumental variables that measure attitudes toward health care and health insurance and that had significant effects on enrollment in TennCare according to a Wald test. R. Pindyck and D. Rubinfeld, *Econometric Models and Economic Forecasts* (New York: McGraw-Hill, 1981). We then compared the coefficients of the probit model and the coefficients of the outcome equation from the bivariate probit model using Hausman's specification test. J. Hausman, "Specification Tests in Econometrics," *Econometrica* 46, no. 6 (1978): 1251–1271. For most outcomes considered, we could not reject the null hypothesis that the difference in coefficients between the two specifications is not systematic. This result provides further evidence that selection is not a major problem in our sample.
14. To obtain the regression-adjusted estimates of an outcome variable for the expansion and uninsured comparison groups, we varied the characteristics of interest across the whole sample for each subpopulation (expansion or uninsured comparison group) and used the observed values of the rest of the individual characteristics included in the regression model to obtain predicted outcomes. We then averaged the predicted outcomes across the whole sample for each subpopulation. The reported level of significance corresponds to a one-tailed test of the coefficient of the study group binary variable; the associated *p* values are available from the authors. Contact Lorenzo Moreno, <lmoreno@mathematica-mpr.com>. We used the appropriate svy* commands available in STATA. See StataCorp, Stata Statistical Software: Release 6.0 (College Station, Tex.: Stata Corporation, 1999).
15. C.J. Conover and H.H. Davies, *The Role of TennCare in Health Policy for Low-Income People in Tennessee* (Washington: Urban Institute, 2000); and J.F. Blumstein and F.A. Sloan, "Health Care Reform through Medicaid Managed Care: Tennessee (TennCare) as a Case Study Paradigm," *Vanderbilt Law Review* 53 (2000): 125–270.
16. See ACP-ASIM Online, "No Health Insurance? It's Enough to Make You Sick—Scientific Research Linking the Lack of Health Coverage to Poor Health," Executive Summary and list of references and abstracts, <www.acponline.org/uninsured/lack-fore.htm> (7 December 1999).
17. "State Children's Health Insurance Program (SCHIP) Status Report," updated as of 27 October 1999, <www.hcfa.gov/init/chstatus.htm> (21 August 2000).
18. "TennCare Program Redesign Recommendations, Fiscal Year 2000/2001," <www.state.tn.us/health/tenncare/tc2/tc2.htm> (25 May 2000).